

Modeling ethnicity into technology: using virtual agents to understand sociolinguistic variation

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Increasingly dialectal differences among students have been investigated as input into the persistently lower test scores of students of color as compared to their Euro-American peers. Though the exact mechanisms behind the phenomenon are unclear, students who come to school speaking the dialect known as African American Vernacular English (AAVE) consistently score lower on indices of emergent literacy skills than their peers who primarily speak Mainstream American English (MAE). We believe that educational technologies designed on the basis of a deep understanding of the linguistic and cultural underpinnings of dialect use have a unique ability to not only provide insight about the role of dialect in learning, but also to help diminish the consequences of non-mainstream dialect use in the classroom (while not necessarily reducing the use of the dialect itself).

In our work, we instantiate our technologies in the form of virtual peers (VPs) – life-sized, articulated agents that are able to utilize physical appearance and verbal, non-verbal, and para-verbal cues to communicate alignment with different ethnic groups. This allows us to examine, for example, how specific linguistic features impact people’s perceptions of the agent’s ethnicity (and how this perception changes based on other available social cues about the agent), or how people vary their own linguistic features in response to different sociolinguistic cues in their agent interlocutor. These agents may also serve to help us more broadly understand the role of dialect, culture, and ethnicity on human relationships, by examining how people treat otherwise identical agents who only vary along one dimension under examination. In our current work, we work towards understanding how students learn from and collaborate with virtual peer partners who are able to signal affiliation with different cultural groups, with our previous analyses demonstrating that students perform better on a subsequent science assessment after working with agents who provided examples in the shared dialect.

In this session, we will perform a live demonstration of our virtual agent technology, show video examples of children interacting with our agent system, and open a discussion about what it means to model culture into a technological system.